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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/572,820

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EXAMINER

BLOOM, NATHAN J

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/572,820	Applicant(s) GOMILLA ET AL.	
	Examiner NATHAN BLOOM	Art Unit 2624	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 22 March 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-14 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-14 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>03/22/2006, 05/18/2007</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION***Double Patenting***

1. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the “right to exclude” granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

2. Claim 1 is provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claim 1 of copending Application No. 10/575696.

Although the conflicting claims are not identical, they are not patentably distinct from each other because Claims of the current application (‘820) is broader in scope than those of the copending application (‘696). The limitations of the two copending claims are nearly identical except that application ‘696 includes the detail that the blocks are M x N pixels.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

Claim Rejections - 35 USC § 101

3. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

Claims 1-14 are rejected under 35 U.S.C. 101 as not falling within one of the four statutory categories of invention. Supreme Court precedent¹ and recent Federal Circuit decisions² indicate that a statutory “process” under 35 U.S.C. 101 must (1) be tied to another statutory category (such as a particular apparatus), or (2) transform underlying subject matter (such as an article or material) to a different state or thing. While the instant claim(s) recite a series of steps or acts to be performed, the claim(s) neither transform underlying subject matter nor positively tie to another statutory category that accomplishes the claimed method steps, and therefore do not qualify as a statutory process. For example claim 1 defines a method of computing an average, selecting film grain block, and blending a film grain block with an input image block. However, the recited language does not require that the transformation (in this case the filtering) of the data be performed by a statutory device, system, or apparatus thus the claims do not meet the machine requirement. Furthermore, the claimed process does not meet the transformation requirement: no significant transformation of a real world object or data representing a real world object is performed, nor does the claim meet the transformation requirement for data further

¹ *Diamond v. Diehr*, 450 U.S. 175, 184 (1981); *Parker v. Flook*, 437 U.S. 584, 588 n.9 (1978); *Gottschalk v. Benson*, 409 U.S. 63, 70 (1972); *Cochrane v. Deener*, 94 U.S. 780, 787-88 (1876).

² *In re Bilski*, 88 USPQ2d 1385 (Fed. Cir. 2008).

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requires that the result or a response be output in such a manner that a user is made aware of the output (such as an alarm related to certain criteria or display of the image data – Note: List does not encompass all possibilities.).

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 1-8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Schlockermann et al. (“Film Grain Coding in H.264/AVC”) in further view of Gomila (“SEI Message for Film Grain Encoding: Syntax and Results”).

Instant claim 1: A method for simulating film grain in an input image block, comprising the steps of:

(a) computing an average value of at least one image parameter for the block;

[Schlockermann has taught film grain coding using parameters of the block based on local statistics (section 2.2) and the transmission of this information via an SEI message, but does not detail what the local statistics or parameters are. However, as part of the same project (Joint Video Team of ISO/IEC MPEG & ITU-T VCEG), Schlockermann has cited Gomila whom further details the local statistics that are used as parameters for the block. Gomila has taught the syntax and details of the SEI message and block parameters on pages 2-4, and has taught on

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page 3 lines 9+ that the average intensity of the blocks (b_{avg}) is determined to represent all the pixels in a block. It would have been obvious to one of ordinary skill in the art at the time of the invention to utilize the SEI message and block parameterization details of Gomila with the film grain coding method of Schlockermann since the two methods have been specifically designed to work together.]

(b) selecting a film grain block from at least one previously established pool of film grain blocks whose image parameter most closely matches the image parameter of the input image block; *[Schlockermann has taught in section 2.2 and figure 2 the film grain block pool generation process and the selection and application of the grain blocks with an intensity value “a” based on the local statistics of the image (selecting previously established pool of film grain based on image blocks) and modifies the grain block according the parameters of the image block.]*

(c) blending the selected film grain block with the input image block. *[Schlockermann mentions the blending and shows examples and results, but does not detail the process. However, Gomila has described the blending (including equations) on page 3 (equations 1 and 2).]*

Instant claim 2: The method according to claim 1 further comprising the step of de-blocking the selected film grain block prior to blending with the input image block. *[Gomila has taught on page 4 lines 34-35 that the blocks are filtered to reduce blockiness.]*

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Instant claim 1: The method according to claim 1 wherein the previously established film grain blocks are organized in the at least one pool based on image intensity. [*Film grain blocks are parameterized and placed (“organized”) into pools (See Schlockermann) based on average intensity of the blocks (see Gomila).*]

Instant claim 4: The method according to claim 1 further including the step of updating the at least one pool in accordance with characteristics of the input image. [*Schlockermann has taught modifying the film grain blocks by an intensity value “a” that is based on the intensity of the input image.*]

Instant claim 5: The method according to claim 3 where a different film grain block is selected for at least one of a different color component. [*The color space and the parameterization of film grain blocks for each color is taught in section 3 of Gomila by the parameter flags for each color component (param[c][i][j]).*]

Instant claim 6: The method according to claim 1 further including the step of transforming the selected block prior to the blending step. [*Blocks are decoded prior to the blending step, see equations 1 and 2 of Gomila (I_{decoded}).*]

Instant claim 7: The method according to claim 1 further comprising the step of selecting a film grain block from among a plurality of pools of film grain blocks. [*As per the discussion above, the film grain blocks are also parameterized by a plurality of colors (one pool for each color).*]

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Instant claim 8: A method for simulating film grain in an input image from which the film grain has at least been attenuated and been decomposed in into input image blocks, comprising the steps of:

(a) selecting a successive one of a set of input image blocks; [*The extraction and encoding of film (series of successive image data) that is broken down into blocks (images are thus a succession of blocks) has been taught by Schlockermann in section 1.*]

(b) computing an average value of at least one image parameter for the successive block; [*As per the discussion of claim 1 the determination of average parameters for each block in order to select a previously established film grain model has been taught by Schlockermann in view of Gomila.*]

(c) selecting, from among at least one pool of previously established film grain blocks, a film grain block having image parameter most closely matches the average value of the at least one image parameter of the successive block; [*See the discussion of claim 1.*]

(d) repeating steps (a)-(c) for all the pixel blocks in the image; and [*Additionally, Schlockermann has taught that this method is performed for all macroblocks of the image (section 1).*]

(e) blending the selected film grain blocks to yield an output image with film grain. [*See the discussion of claim 1.*]

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Instant claim 9: The method according to claim 8 wherein the previously established film grain blocks are organized in the at least one pool based on image intensity. [*As per the discussion of claim 3 this limitation has been taught.*]

Instant claim 10: The method according to claim 8 further including the step of updating the at least one pool of pre-established film grain blocks in accordance with characteristics of the input image. [*Schlockermann has taught modifying the film grain blocks by an intensity value "a" that is based on the intensity of the input image.*]

Instant claim 11: The method according to claim 8 where a different film grain block is selected for at least one of a different color component. [*The color space and the parameterization of film grain blocks for each color is taught in section 3 of Gomila by the parameter flags for each color component (param[c][i][j]).*]

Instant claim 12: The method according to claim 7 further including the step of transforming the selected block prior to repeating steps (c)-(d). [*As per the above discussion of claim 8 and the teachings of Gomila (see claim 6) wherein the transformation of at least the current block is performed prior to the blending.*]

Instant claim 13: The method according to claim 8 further comprising the step of selecting a film grain block from among a plurality of pools of film grain blocks. [*As per the discussion*

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above, the film grain blocks are also parameterized by a plurality of colors (one pool for each color).]

Instant claim 14: The method according to claim 8 further comprising the step of de-blocking the successive film grain block prior to repeating steps (c)-(d). [*Gomila has taught on page 4 lines 34-35 that the blocks are filtered to reduce blockiness.*]

Conclusion

6. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Several concurrent applications belonging to the same assignee and containing related inventions were discovered during the prior art search. The Examiner recommends that in the future, any related applications be included in an Information Disclosure Statement.

- US 2006/0082649 – film grain simulation method (same assignee), not prior art.
- US 2006/0083316 – film grain simulation method (same assignee), not prior art.
- US 2006/0083426 – film grain simulation method (same assignee), not prior art.
- US 2006/0133686 – film grain simulation method (same assignee), not prior art.
- US 2006/0182183 – film grain simulation method (not same assignee), not prior art.
- US 2006/0256853 – film grain simulation method (same assignee), not prior art.
- US 2006/0291557 – mentions film grain simulations, but includes no details (same assignee), prior art with 102(e) date.
- US 2007/0036452 – film grain simulation method (same assignee), not prior art.

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- US 2007/0047658 – film grain simulation method (same assignee), not prior art.
- US 2007/0058866 – film grain simulation method (same assignee), not prior art.
- US 2007/0070241 – film grain simulation method (same assignee), not prior art.
- US 2007/0104380 – film grain simulation method (same assignee), not prior art.
- US 2007/0117291 – film grain simulation method (same assignee), not prior art.
- US 2008/0152250 – film grain simulation method (same assignee), not prior art.
- US 5709972 – measures film grain in images.
- US 6587509 - adding noise to make decompressed digital image seem "more real" - reduce effects of compression loss.

Contact Information

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Nathan Bloom whose telephone number is 571-272-9321. The examiner can normally be reached on Monday through Friday from 10:00 am to 6:30 pm (EST).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Matthew Bella, can be reached on 571-272-7778. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR

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system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

/Matthew C Bella/

Supervisory Patent Examiner, Art Unit 2624